FSIS Background

United States Department of Agriculture

Food Safety and Inspection Service

Campylobacter Questions and Answers

The Bacteria

Q: **What is *Campylobacter?***

A: *Campylobacter* [pronounced "kamp-e-lo-back-ter"] bacteria are commonly found in the intestinal tracts of cats, dogs, poultry, cattle, swine, rodents, monkeys, wild birds and some humans. The bacteria pass through feces to cycle through the environment and have also been found in untreated water. *Campylobacter jejuni*, the strain associated with most reported human infections, may be present in the body without causing illness.

Q: **Is *Campylobacter* new?**

A: No, *Campylobacter* — under a different name — has been known to cause animal disease for about 80 years. In the 1970's, scientists conclusively proved that *Campylobacter* bacteria could cause human illness as well. However, the bacteria are suspected as the cause of an outbreak of human illness in the early 1940's *(associated with unpasteurized milk)*.

Q: **Is *Campylobacter* tougher than other bacteria?**

A: No. In fact, the bacteria are extremely fragile and are easily destroyed by thorough cooking. They are also destroyed through typical water treatment systems.

Q: **Why are we hearing about *Campylobacter* now?**

A: In 1991, a series on a Washington, D.C., news show and network affiliates increased public awareness of *Campylobacter*. Unfortunately, the series also contained some inaccuracies and misleading statements.

During the 1980's, public health authorities began to learn more about the prevalence of the bacteria in the environment, the illness it can cause, and laboratory techniques for identifying the bacteria. As States increase their reporting of illnesses to the Centers for Disease Control (CDC) and research continues on the organism and the disease, more stories about *Campylobacter* can be expected in the scientific and general media.

The Illness

Q: **What harm can *Campylobacter* bacteria cause?**

A: The bacteria can exist in the intestinal tracts of people and animals without causing any symptoms at all. However, if people consume bacteria in raw milk, contaminated water, or raw or undercooked meat or poultry, they may acquire a *Campylobacter* infection *(also called campylobacteriosis)*. The CDC believes consuming less than 500 *Campylobacter* cells can cause the illness. Infections have also been associated with contaminated water consumed during travel and contact with infected dogs and cats, whose fecal matter on their coats might be transmitted to human hands through petting.

Symptoms of *Campylobacter* infection, which usually occur within 2 to 10 days after the bacteria are ingested, include fever, headache and muscle pain, followed by diarrhea, stomach pain and nausea.

Complications can include meningitis, urinary tract infections and possibly reactive arthritis *(rare and almost always short-term)*.

Q: **Are more people becoming ill from campylobacteriosis?**

A: **No, CDC data do not indicate any rise in the actual number of illnesses. However,**

reports of illness are going up, as more States recognize that *Campylobacter* infections are a public health concern, and as laboratory techniques for culturing and identifying the bacteria continue to be refined.

Q: **Do many people actually die from *Campylobacter* infections?**

A: *Campylobacter* infections are rarely fatal; CDC recorded two deaths from outbreaks *(affecting more than one person at the same time)* over a 9-year period. The estimated death rate per 100,000 cases has actually fallen as more data has been gathered.

Study of epidemiological data from actual illnesses helps the public health community understand and solve public health problems; however, the data are estimates and must be interpreted with great caution.

Q: **Who is most susceptible?**

A: Anyone may become ill from a *Campylobacter* infection. However, persons with underdeveloped immune systems *(such as newborns)* or immune systems weakened by chronic illness *(such as AIDS)* or medical treatment *(cancer patients on immunosuppressive therapy)* are believed to be more susceptible to health complications from *Campylobacter* or any other pathogenic bacterial illness. The elderly could also be more susceptible because of weakened immune systems.

Q: **Are *Campylobacter* bacteria causing a new disease?**

A: No. The CDC has tracked outbreaks of the disease caused by the bacteria since 1978, although laboratory-based surveillance did not begin until 1982. Since 1982, States have been asked to report to the CDC each individual finding of the bacteria in human blood or stools. Today, 44 States report such findings to the CDC. FSIS encourages States to report to the CDC so that this problem can be better understood and resolved.

Q: **Is chicken the cause of this disease?**

A: No. Foods don't cause illness; bacteria do. Contaminated water, raw milk, and raw or undercooked meat or poultry can all be the *"vehicles"* that carry *Campylobacter* and other bacteria to the human intestinal system. Failure to properly wash hands after contact with infected pets or after bathroom use may also continue the cycle of *Campylobacter* infection. Eating contaminated food or drinking impure water can also be a way to ingest the bacteria.

Campylobacter Control

Q: **What is the best way to prevent *Campylobacter* infections?**

A: The best prevention is to follow sensible public health precautions. A recent CDC report* states, *"Universal pasteurization of milk and proper treatment of all drinking water might prevent 80 percent of the U.S. outbreaks due to Campylobacter."* The report also noted that improved chicken-handling practices in kitchens would reduce the number of illnesses. To minimize the risk of illness from *Campylobacter* infections or other bacterial illnesses:

- **Don't** drink untreated water from pure-looking mountain streams or lakes.
- **Don't** drink unpasteurized raw milk from farms or other sources.
- **Do** follow the principles of safe food handling, including thorough cooking and rapid, even cooling. Avoid cross-contamination of other foods by thoroughly washing cutting boards *(preferably plastic, not wooden)* and hands after contact with raw meat and poultry.

  Campylobacter and other bacteria are destroyed when meat or poultry is cooked to an internal temperature of 160 degrees F, although most people prefer chicken cooked to 180-185 degrees F. Compartments of home freezers generally are *not* cold enough to destroy bacteria. *(See the back of this backgrounder for more tips.)*

Q: **Why can't *Campylobacter* be stopped at the source?**

A: *Campylobacter* are and should be stopped at a number of different points in the food chain:

- Good sanitary practices on farms, as recommended by USDA, minimize the opportunity for the bacteria to spread among animals and birds.

- Pasteurization of milk and treatment of municipal water supplies eliminate another route of transmission for *Campylobacter* and other bacteria.

- USDA enforces a recall policy if ready-to-eat meat and poultry products are contaminated with bacteria that cause illness.

- Raw foods are not sterile, and there are no requirements that they be sterile. Thorough cooking destroys bacteria. Food processing companies are accountable for following good, up-to-date manufacturing practices that minimize the opportunity for spread of *Campylobacter* and other bacteria.

One of the best systems for preventing unsafe foods is called the Hazard Analysis and Critical Control Point (HACCP) approach. USDA is studying how to best apply this preventive system in inspection. *(For information about HACCP, write FSIS Information Office.)*

Bacteria on raw meat and poultry cannot be seen, tasted or smelled. It would not be possible for USDA to inspect for *Campylobacter* or to enforce strict limits for bacteria on raw meat and poultry without (1) a rapid test for *Campylobacter* that could be used in the plant; and (2) the human resources and funding to implement such programs. Scientific experts do not believe these very costly programs would effectively reduce foodborne disease.

USDA is supporting research to learn more about *Campylobacter* in food and how to control it.

Q: **Why have other countries, such as Sweden, been able to solve this problem?**

A: While Sweden has a rigorous and costly program based on control of *Salmonella*, it also has not been able to eliminate the problem of bacterial foodborne illness. *Campylobacter* infections are only a part of this public health problem.

Sweden has a program under which flocks are destroyed if they carry *Salmonella enteritidis* bacteria. Large numbers of animals have been destroyed under the program. There is more than a 10-fold magnitude of difference in poultry product production between Sweden and the United States. The increased production in the U.S. makes use of control procedures similar to those in Sweden impossible or impractical, at best. Other more effective and practical solutions are being investigated.

Q: **What is USDA doing to prevent *Campylobacter* infections?**

A: In its commitment to ensure the public has a safe, wholesome food supply, USDA's Food Safety and Inspection Service (FSIS) is constantly working to improve the level of safety and reduce contaminants in the meat and poultry supply. USDA enforces a recall policy on contaminated ready-to-eat products. There is no requirement, however, that raw foods of any kind be sterile.

In addition, FSIS has embraced the Hazard Analysis and Critical Control Point (HACCP) system as the food protection system of the future and plans to work with the entire food industry to establish microbiological controls throughout the complex food-producing chain in order to prevent potential problems.

Finally, FSIS conducts extensive food handling education programs for consumers, institutional food handlers, health care professionals and other groups.

Q: **Who can I trust on food safety?**

A: Every citizen needs to decide for himself or herself whether the Government and the industry are doing their jobs to help protect people from foodborne illness. USDA encourages the public to ask questions and discuss food safety issues with reputable sources, including health care professionals. However, USDA also advises citizens to consider carefully food safety and other health news that appears to frighten more than inform.

The United States has worked hard to achieve one of the best public health systems in the world, including Federal, State and local programs for food safety. We will keep working to improve those systems and to educate the public about safe food handling.

* *"Campylobacter isolates in the United States, 1982-1986,"* Centers for Disease Control, *"Morbidity and Mortality Weekly Report,"* U.S. Department of Health and Human Services, Vol. 37, No. SS-22.

Media Inquiries: Jim Greene, (202) 382-0314

Other Inquiries: FSIS Information Office, (202) 447-9113, 1160-South Building, Washington, D.C. 20250

Safe Food Tips to Destroy *Campylobacter* and Prevent Illness

Most foodborne illness from bacteria on raw meat or poultry can be prevented by proper food handling in home and institutional kitchens.

To keep food safe at home, refrigerate promptly and properly. Freeze raw meat and poultry you can't use within 1 or 2 days. Freezers should register 0 degrees F, and refrigerators, 40 degrees F.

Food should not be thawed at room temperature. Cross-contamination of bacteria to other foods from raw meat and poultry can be prevented by thorough washing of hands, countertops, and utensils.

Campylobacter are very fragile bacteria that are easily destroyed by thorough cooking.

For safe microwaved meat or poultry...

- First, microwave the food in a covered dish, or under a plastic wrap. Under cover, steam helps kill bacteria and ensures uniform heating.
- Second, rotate the dish or stir the food during microwaving. This is necessary for even cooking.
- Third, check the internal temperature in several places with a temperature probe or meat/poultry thermometer. If the internal temperature is at least 160 degrees F for meat and 180 degrees F for poultry, *Campylobacter* and other bacteria will be destroyed.
- Fourth, be sure to observe the *"standing time"* recommended in the microwave recipe. This step is necessary to complete the microwave cooking process before food is served.

For safe grilled chicken or meat...

- Cook the meat to an internal temperature of 160 degrees F and poultry to an internal temperature of 180 degrees F.
- If you plan to use marinade for dipping or basting on the grill, reserve some in the refrigerator before use on raw meat or poultry. Do not reuse marinades from the raw meat or poultry since they may contain bacteria.
- Transfer cooked meat or poultry to a clean platter — never to the dish that held the raw meat or poultry.

For safe precooked meat and poultry...

- Precook thoroughly to internal temperatures of 160 degrees F for meat and 180 degrees F for poultry.
- Cool the cooked food rapidly and evenly. Large roasts and whole poultry should be cut into smaller portions, then wrapped separately. Casserole-type dishes should be cooled in shallow, covered pans rather than deep pots.

For safe meat and poultry in restaurants...

- Eat only in restaurants that are clean, follow local public health rules and practice safe food handling. Restaurants that do not follow these rules should be reported to local public health officials. Send back food that is under-cooked.

For more information about safe food handling, call USDA's toll-free Meat and Poultry Hotline at 1-800-535-4555. You may call from 10 a.m. to 4 p.m., Eastern time, on weekdays.

Helpful information is also available in an FSIS pamphlet entitled, *"A Quick Consumer Guide to Safe Food Handling."* Write: Consumer Information Center, Box 574X, Pueblo, CO 81009